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Therefore, this

United States Patent

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J. Todd Johnson

Acting Commissioner of Patents and Trademarks

Ollie M. Person
Attest



US005940600A

United States Patent [19]

Staats et al.

[11] Patent Number: **5,940,600**[45] Date of Patent: **Aug. 17, 1999**[54] **ISOCHRONOUS CHANNEL HAVING A LINKED LIST OF BUFFERS**[75] Inventors: **Erik P. Staats, Brookdale; Robin D. Lash, Milpitas, both of Calif.**[73] Assignee: **Apple Computer, Inc., Cupertino, Calif.**[21] Appl. No.: **08/625,993**[22] Filed: **Apr. 1, 1996**[51] Int. Cl.⁶ **G06F 13/00**[52] U.S. Cl. **395/287; 395/285; 395/280; 395/306; 395/309**[58] Field of Search **395/287, 250, 395/280, 306, 308, 800, 401, 200, 876, 309, 200.63; 370/56, 79, 91, 465, 395, 424**[56] **References Cited****U.S. PATENT DOCUMENTS**

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[57]

ABSTRACT

A computer system consists of a plurality of nodes, each with an associated local host, coupled together with a plurality of point-to-point links. An isochronous data channel is established within the computer system between a first subset of the plurality of nodes. The isochronous data channel includes a linked list of buffers which are used as temporary storage locations for data transmitted on the isochronous data channel. Each node which is part of the isochronous data channel is configured as a sender or a receiver and data transmissions are commenced. The presence of isochronous data in the channel generates an interrupt which signals a central processing unit (CPU) that data is available. The data is transferred to an associated location within the linked list of buffers and the CPU then moves on to other tasks. In other embodiments, data is transferred using DMA techniques rather than interrupt driven events. Buffers can also be used to transmit isochronous data.

11 Claims, 4 Drawing Sheets